

# **BUMPER FOR AN UMBRELLA**

## **BACKGROUND OF THE INVENTION**

### **1. Field of the Invention**

The invention relates to a bumper for an umbrella, and particularly a bumper secured on a shank of the umbrella to provide a shock-absorbing efficiency when the umbrella opens.

### **2. Description of Related Art**

With reference to Fig. 4, a conventional umbrella is composed of a frame (50) and a canopy (60) mounted on the frame (50).

The frame (50) has a shank (52) with a top end, a sliding ring (54), a spreader (542), a stretcher (56), a rib set (58) and a ferrule (522). The sliding ring (54) is movably mounted on the shank (52) and has an enlarged round top (not numbered), a telescoping tube (not numbered) extending from the round top and a stretcher base (544) mounted on the telescoping tube. The spreader (542) is composed of multiple rods (not numbered) pivotally and radially formed around the enlarged round top of the sliding ring (54). The stretcher (56) is also composed of multiple rods (not numbered) pivotally and radially attached around the stretcher base (544). The rib set (58) is composed of multiple rods pivotally and radially attached at the top end of the shank (52) to support the canopy (60). Each rod of the stretcher (56) movably (what is moveably) connects one corresponding rod of the spreader (542) at a middle portion and further has a distal end to pivotally connect to one corresponding rod of the rib set (58). Additionally, multiple retractable

1 tabs (not shown) are formed on the shank (52) to selectively locate the  
2 sliding ring (54) at an extending position or at a retracting position.

3 Moreover, a limiting tube (70) is mounted on the shank (52) and  
4 secured under the top end of the shank (52) to selectively about the  
5 stretcher base (544) of the sliding ring (54). Whereby, the limiting tube  
6 (70) enables the sliding ring (54) to stop in a preferred position to fully  
7 extend the stretcher (56) and keep the umbrella open.

8 However, the limiting tube (70) is usually made of rigid plastic  
9 and easily broken when the sliding ring (54) bumps against the limiting  
10 tube (70) whereby the umbrella malfunctions and must be thrown away.  
11 This is especially so when the umbrella is automatically extended by  
12 means of securing a restituting spring (not shown) around the  
13 telescoping tube of the sliding ring (54). The restituting spring is  
14 compressed and the telescoping tube retracts into the sliding ring (54)  
15 when the umbrella is at the retracting position. When the tab locating  
16 the sliding ring (54) retracts, the sliding ring (54) is released and  
17 rapidly bumps the limiting tube (70), causing vibrations and damage to  
18 joints of the frame (10).

19 With reference to Fig. 5, to avoid the vibrations and damage  
20 caused by bumping, a spring (80) is mounted on the shank (52)  
21 between the top end of the shank (52) and the stretcher base (544) of  
22 the sliding ring (54). Although the spring (80) provides a shock-  
23 absorbing efficiency to the umbrella, it is difficult to secure the spring  
24 (80) under the top end of the shank (52) whereby the spring (80) slides

1 along the shank (52) when the sliding ring (54) does not abut against  
2 the spring (80). However, the spring (80) sliding on the shank (52) is  
3 easily trapped by the multiple tabs emerging out from the shank (52)  
4 such that the operation of the umbrella blocked and inconvenient.

5 The present invention has arisen to provide a bumper for an  
6 umbrella to overcome and obviate the drawbacks of the conventional  
7 umbrellas.

#### 8 SUMMARY OF THE INVENTION

9 A first objective of the present invention is to provide a bumper  
10 for an umbrella that has an excellent shock-absorbing efficiency.

11 Further benefits and advantages of the present invention will  
12 become apparent after a careful reading of the detailed description in  
13 accordance with the drawings.

#### 14 BRIEF DESCRIPTION OF THE DRAWINGS

15 Fig. 1 is a perspective view of a bumper in accordance with the  
16 present invention, wherein the bumper is secured on a frame of an  
17 umbrella;

18 Fig. 2 is an enlarged perspective view of the bumper in Fig. 1;

19 Fig. 3 is a partially enlarged cross-sectional side plane view of  
20 the bumper showing the shock-absorbing situation of the bumper;

21 Fig. 4 is a perspective view of a first embodiment of an  
22 umbrella in accordance with the prior art; and

23 Fig. 5 is a perspective view of a second embodiment of an  
24 umbrella in accordance with the prior art.

## 1     DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

2             With reference to Fig. 1, a bumper (30) for an umbrella  
3     composed of a frame (10) and a canopy (20), which is adapted to  
4     secure on the frame (10) of the umbrella.

5             The frame (10) has a shank (12) with a top end, a sliding ring  
6     (14), a spreader (142), a stretcher (16), a rib set (18) and a ferrule (122).  
7     The sliding ring (14) is movably mounted on the shank (12) and has an  
8     enlarged round top (not numbered), a telescoping tube (not numbered)  
9     extending from the round top and a stretcher base (144) mounted on the  
10    telescoping tube. The spreader (142) is composed of multiple rods (not  
11    numbered) pivotally and radially formed around the enlarged round top  
12    of the sliding ring (14). The stretcher (16) is also composed of multiple  
13    rods (not numbered) pivotally and radially attached around the stretcher  
14    base (144). The rib set (18) is composed of multiple rods pivotally and  
15    radially attached at the top end of the shank (12) to support the canopy  
16    (20). Each rod of the stretcher (16) pivotally connects one  
17    corresponding rod of the spreader (142) at a middle portion and further  
18    has a distal end to pivotally connect to one corresponding rod of the rib  
19    set (18).

20            With reference to Fig. 2, the bumper (30) is made of resilient  
21    material and shaped in a serpentine configuration. In Fig. 2, the bumper  
22    (30) is an undulating tube composed of a securing end (32), a  
23    serpentine middle portion (34), an abutting end (36) and a straight  
24    through hole (not numbered) defined through securing end (32), the

1 serpentine middle portion (34) and the abutting end (36). The securing  
2 end (32) is adapted to secure under the top end of the shank (12) and  
3 further has a narrow distal edge to clamp on the shank (12). Multiple  
4 slits (322) are defined in the narrow distal edge to allow the narrow  
5 distal edge slightly expanding when the bump (30) secures under the  
6 top end of the shank (12). By clamping at the narrow distal end, the  
7 bumper (30) is securely attached under the top end of the shank (12) in  
8 position. The serpentine middle portion (34) is in the form of an  
9 undulating bar to make the bumper (30) have restitution spaces  
10 between two undulations. The abutting end (36) is adapted to abut on  
11 the stretcher base (144) and is shaped as a cubic block.

12         With reference to Fig. 3, when the sliding ring (14) bumps the  
13 abutting end (36) of the bumper (30), the serpentine middle section (34)  
14 is slightly compressed to damp the shock. Therefore, the vibration and  
15 the damage to the frame (10) of the umbrella can be minimized to a  
16 non-damaging magnitude.

17         According to the above description, the bumper (30) is securely  
18 mounted under the top end of the shank (12) to avoid the bumper (30)  
19 sliding on the shank (12) and trapped by the tabs. Additionally, the  
20 bumper (30) is enabled to be compressed at the serpentine middle  
21 portion (34) to damp the shock caused by bumping of the sliding ring  
22 (32). Therefore, malfunction and damage to the umbrella are avoided.

23         Although the invention has been explained in relation to its  
24 preferred embodiment, many other possible modifications and

- 1 variations can be made without departing from the spirit and scope of
- 2 the invention as hereinafter claimed.